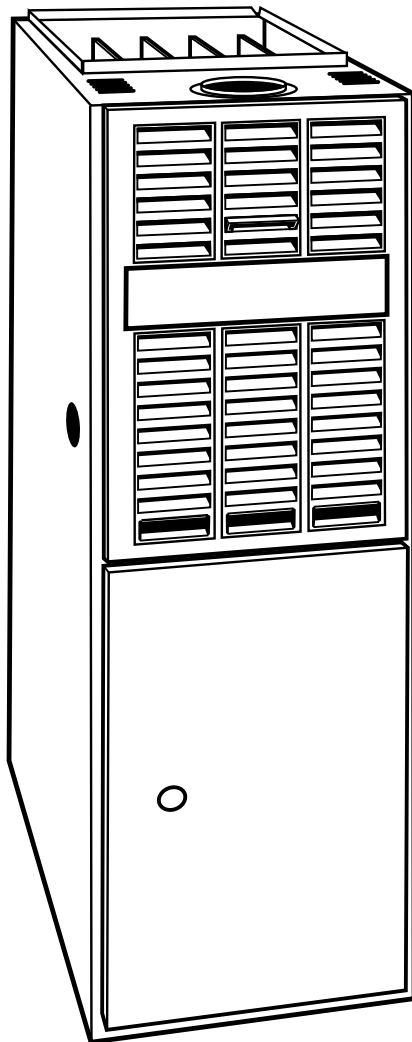




Product Data

58PAV Energy-Efficient Induced-Combustion Upflow Furnace

Input Capacities:
45,000 thru 155,000 Btuh



80% AFUE At Budget Price

Carrier provides an 80 percent Annual Fuel Utilization Efficiency (AFUE) gas furnace for the budget conscious consumer and builder. The 58PAV offers the same high quality you demand and receive from Carrier.

The cabinet is constructed from a specially selected galvanized steel. There is also double protection for the cabinet. First, a galvanized steel substrate provides resistance to rusting. Then the cabinet is constructed of prepainted steel — the same high-quality finish found on refrigerators and dishwashers.

The 58PAV offers a hot surface ignition system which provides a superior and more reliable ignition system than older spark relight systems.

The heat exchangers are constructed of aluminized steel and covered by a 20-year Limited Warranty. They are Carrier's patented Super-S heat exchangers that improve heat transfer and enable downsizing of this furnace to only 40-in. tall.

A patented draft safeguard will stop furnace operation if the vent system is not operating properly.

To improve the sound level, we have incorporated a soft mount inducer assembly and a slow opening gas valve.

The control board is the brain of this induced-combustion gas furnace. It offers a unique self-test feature that checks all the major functions of the furnace within 1 minute. The control board also features a 3-amp fuse that protects the transformer and control board. Another feature on the control board is an LED status indicator light to ensure top furnace performance.



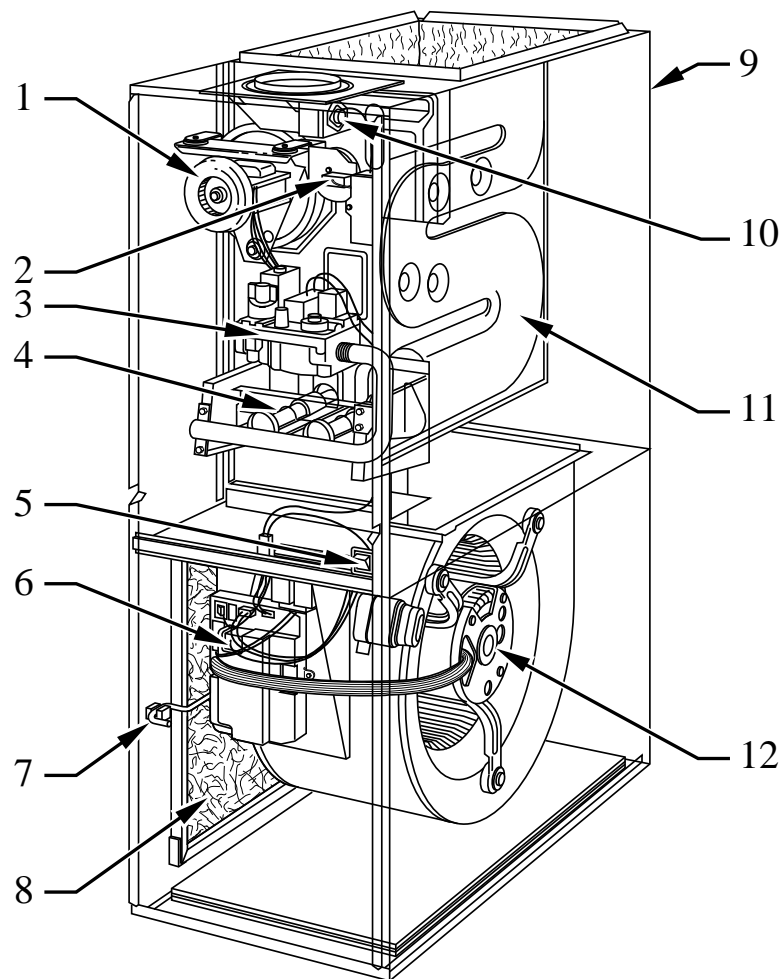
The floor plan shows a large rectangular building with several rooms and corridors. The layout includes a central corridor, several large rooms, and a series of smaller rooms along the right side. The rooms are labeled with numbers 1 through 10. The plan also shows the location of the entrance, exit, and various service areas.

CONTROL BOARD

A technical line drawing of a motor assembly. It features a rectangular motor housing with a circular fan or cooling fin assembly on the right side. A large pulley is mounted on the front of the motor. A belt is shown looped around the pulley and a smaller pulley on the right. The belt is secured by two tensioning bolts on a horizontal plate at the top of the assembly.

INDUCER BLOWER

A92074



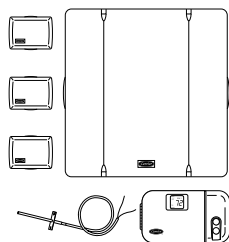
A98062

NOTE: The 58PAV Furnaces are for use with natural gas. These furnaces can be field-converted for propane gas with a factory-authorized and listed accessory conversion kit.

NOTE: Control location and actual control may be different than shown above.

- | | |
|-----------------------------|---------------------------|
| ❶ Inducer Assembly | ❷ Air Filter Retainer |
| ❷ Pressure Switch | ❸ Air Filter |
| ❸ Gas Control Valve | ❹ Wrap-Around Casing |
| ❹ Burner Assembly | ❺ Draft Safeguard Switch |
| ❺ Blower Door Safety Switch | ❻ Heat Exchanger |
| ❻ Control Box | ❼ Blower and Blower Motor |

Carrier accessories*

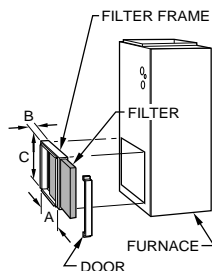


A97432

CONTROLS: THERMOSTATS AND ZONING

Available in programmable and non-programmable models, Carrier thermostats maintain a constant, comfortable temperature level in the home.

For the ultimate in home comfort, Carrier's 2, 4, and 8-zone systems allow temperature control of individual "zones" of the home. This is accomplished through a series of electronic dampers and remote room sensors. The 4-zone system is shown.

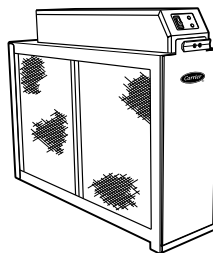


A93068

SIDE FILTER RACK

Custom made filter rack for easy connection when a return plenum already exists. Provides easy access for cleaning filter.

A	23-1/8 in.
B	2-3/8 in.
C	14-1/2 in.

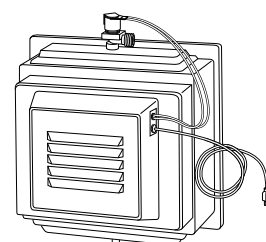


A97380

MECHANICAL OR ELECTRONIC AIR CLEANER

Cleans the air of smoke, dirt, and many pollens commonly found. Saves decorating and cleaning expenses by keeping carpets, furniture, and drapes cleaner.

Electronic air cleaner is shown.



A91365

MODEL 49FH HUMIDIFIER

By adding moisture to winter-dry air, a Carrier humidifier can often improve the comfort and keep furniture, rugs, and draperies in better condition. Moisturizing household air also helps to retain normal body heat and provides comfort at lower temperatures.

UNIT SIZE	045-08 & 12	070-08 & 12	090-14 & 16	111-12, 16 & 20	135-16 & 20	155-20
ELECTRONIC AIR CLEANER (EAC)	Model AIRA					
MECHANICAL AIR CLEANER	Model 31MF					
HUMIDIFIER	Models 49BF, 49BG, 49FH, 49FP, and 49WS					
HEAT RECOVERY VENTILATOR	Models VA3B, VB5B, or VC5B					
ENERGY RECOVERY VENTILATOR	Model VL3A					
THERMOSTAT — NON-PROGRAMMABLE	For Use with 1-Speed Air Conditioner — TSTATCCNAC01-A For Use with 2-Speed Air Conditioner — TSTATCCN2S01-A For Use with 2-Speed Heat Pump — TSTATCCN2S01-A					
THERMOSTAT — PROGRAMMABLE	For Use with 1-Speed Air Conditioner — TSTATCCPAC01-A For Use with 2-Speed Air Conditioner — TSTATCCP2S01-A For Use with 1-Speed Heat Pump — TSTATCCPDF01-A For Use with 2-Speed Heat Pump — TSTATCCP2S01-A or TSTATCCPDF01-A					
THERMIDISTAT — PROGRAMMABLE THERMOSTAT with Humidity Control	TSTATCCPRH01-A					
ZONING — 2 ZONE	ZONECC2KIT01, ZONEKIT2ZCAR					
ZONING — 4 ZONE	ZONECC4KIT01					
ZONING — 8 ZONE	ZONECC8KIT01					
SIDE FILTER RACK (Accepts one 16 x 25 x 1 Filter)	KGAFR0201ALL					
TWINNING KIT†	KGATW0401HSI					
GAS CONVERSION KIT* — NATURAL-TO-PROPANE	KGANP2001ALL					
PROPANE-TO-NATURAL	KGAPN1601ALL					

* Factory-authorized and field installed. Gas conversion kits are A.G.A./C.G.A. recognized.

† 16 and 20 sizes only.

Physical data

UNIT SIZE		045		070		090		111			135		155
		08	12	08	12	14	16	12	16	20	16	20	20
OUTPUT CAPACITY (BTUH)†	Nonweatherized ICS	35,000	35,000	53,000	53,000	71,000	71,000	89,000	89,000	89,000	107,000	107,000	124,000
INPUT BTUH*		44,000	44,000	66,000	66,000	88,000	88,000	110,000	110,000	110,000	132,000	132,000	154,000
SHIPPING WEIGHT (Lb)		114	116	124	126	140	144	150	156	172	168	182	192
CERTIFIED TEMP RISE RANGE (8F)		25-55	15-45	40-70	30-60	40-70	30-60	55-85	45-75	25-55	50-80	40-70	50-80
CERTIFIED EXT STATIC PRESSURE	Heating	0.10	0.10	0.12	0.12	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20
	Cooling	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AIRFLOW CFM‡	Heating	855	1140	830	1140	1170	1445	1175	1410	1750	1645	1775	1770
	Cooling	930	1250	880	1195	1360	1740	1205	1575	2225	1620	2025	2055
LIMIT CONTROL		SPST											
HEATING BLOWER CONTROL		Solid-State Time Operation											
BURNERS (Monoport)		2	2	3	3	4	4	5	5	5	6	6	7
GAS CONNECTION SIZE		1/2-in. NPT											
GAS VALVE (Redundant) Manufacturer		White-Rodgers											
Minimum Inlet Pressure (In. wc)		4.5 (Natural Gas)											
Maximum Inlet Pressure (In. wc)		13.6 (Natural Gas)											
IGNITION DEVICE		Hot Surface											

* Gas input ratings are certified for elevations to 2000 ft. For elevations above 2000 ft, reduce ratings 4 percent for each 1000 ft above sea level. Refer to National Fuel Gas Code Table F4 or furnace Installation Instructions. In Canada, derate the unit 10 percent for elevations 2000 ft to 4500 ft above sea level.

† Capacity in accordance with U.S. Government DOE test procedures.

‡ Air delivery above 1800 CFM requires that both sides, or a combination of 1 side and bottom, or bottom only, of the furnace be used for return air. A filter is required for each return-air supply.

ICS—Isolated Combustion System

Performance data

UNIT SIZE		045		070		090		111			135		155
		08	12	08	12	14	16	12	16	20	16	20	20
DIRECT-DRIVE MOTOR													
Hp (PSC)		1/5	1/3	1/5	1/3	1/3	1/2	1/3	1/2	3/4	1/2	3/4	3/4
MOTOR FULL LOAD AMPS		2.9	5.8	2.9	5.8	5.8	7.9	5.8	7.9	11.1	7.9	11.1	11.1
RPM (Nominal) — SPEEDS		1075-3	1075-4	1075-3	1075-4	1075-4	1075-4	1075-4	1075-4	1075-4	1075-4	1075-4	1075-4
BLOWER WHEEL DIAMETER x WIDTHS (In.)		10 x 6	10 x 6	10 x 6	10 x 6	10 x 7	10 x 8	10 x 7	10 x 8	11 x 10	10 x 8	11 x 10	11 x 10
WASHABLE 16 x 25 x 1-In. FILTER	Qty	1	1	1	1	1	—	1	—	—	—	—	—
WASHABLE 20 x 25 x 1-In. FILTER	Qty	—	—	—	—	—	1	—	1	—	1	—	—
WASHABLE 24 x 29 x 1-In. FILTER	Qty	—	—	—	—	—	—	—	—	1	—	1	1

PSC—Permanent Split Capacitor

ENERGY EFFICIENCY

UNIT SIZE		045		070		090		111			135		155
		08	12	08	12	14	16	12	16	20	16	20	20
CAPACITY BTUH*	Nonweatherized ICS	35,000	35,000	53,000	53,000	71,000	71,000	89,000	89,000	89,000	107,000	107,000	124,000
AFUE%*	Nonweatherized ICS	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0

* Capacity and AFUE in accordance with U.S. Government DOE test procedures.

ICS—Isolated Combustion System

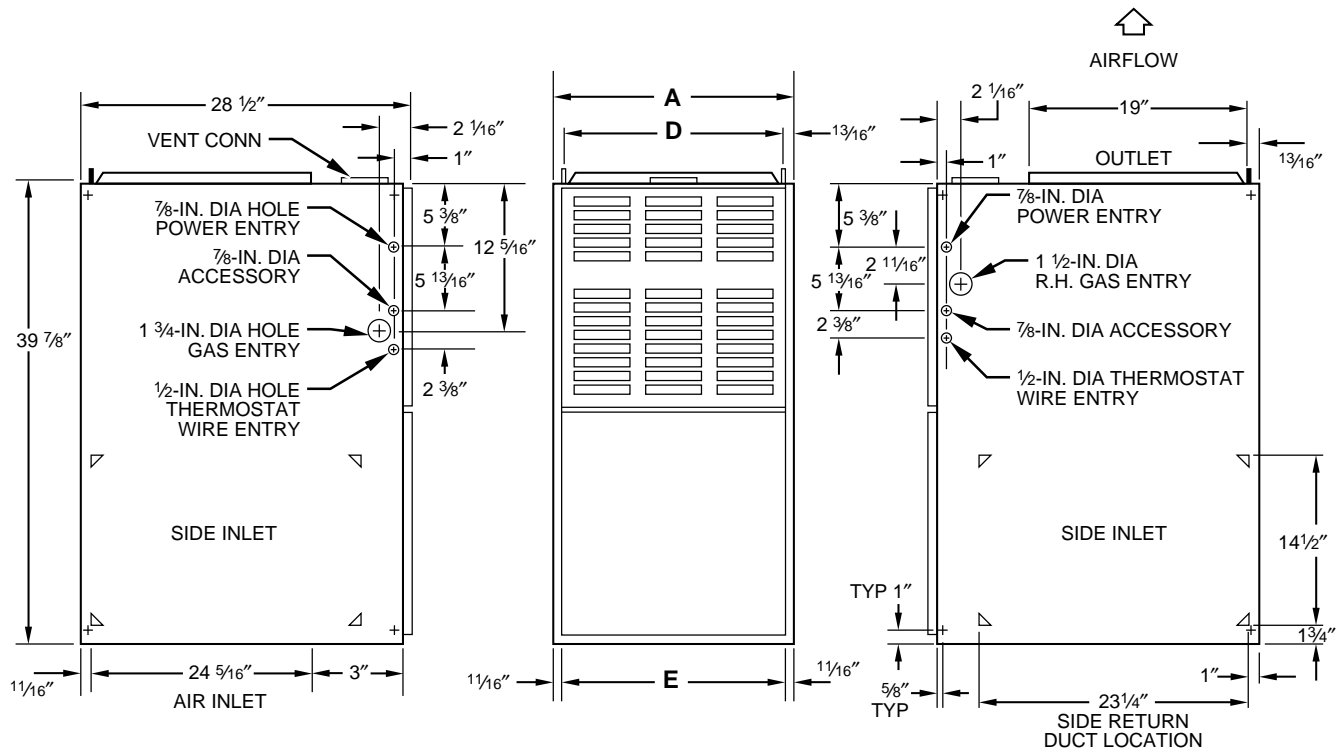
AIR DELIVERY—CFM (With Filter)*

UNIT SIZE	SPEED	EXTERNAL STATIC PRESSURE (In. wc)							
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
045-08	High	1030	1005	970	925	880	815	745	615
	Med-High	855	830	800	765	720	670	595	485
	Med-Low	755	725	695	650	605	555	475	400
045-12	High	1490	1430	1385	1325	1250	1175	1085	975
	Med-High	1335	1305	1270	1230	1160	1090	1005	915
	Med-Low	1140	1130	1105	1075	1030	975	900	830
	Low	980	975	965	915	875	840	785	715
070-08	High	1040	1010	975	935	880	810	735	640
	Med-High	855	830	800	765	715	660	600	490
	Med-Low	745	715	690	650	605	550	475	385
070-12	High	1430	1380	1325	1265	1195	1125	1045	945
	Med-High	1310	1275	1235	1190	1135	1065	990	900
	Med-Low	1140	1130	1100	1065	1000	965	910	815
	Low	990	965	960	935	905	855	800	710
090-14	High	1570	1535	1480	1415	1360	1280	1185	1070
	Med-High	1370	1355	1330	1290	1240	1170	1080	955
	Med-Low	1170	1165	1150	1115	1085	1035	970	880
	Low	1010	1005	990	965	950	905	845	745
090-16	High	2010	1950	1875	1810	1740	1660	1550	1455
	Med-High	1675	1660	1625	1600	1545	1490	1395	1295
	Med-Low	1445	1430	1415	1400	1370	1325	1265	1170
	Low	1260	1260	1260	1250	1210	1180	1115	1030
111-12	High	1470	1415	1340	1270	1205	1115	985	845
	Med-High	1340	1305	1245	1185	1130	1045	915	780
	Med-Low	1185	1175	1140	1075	1030	950	835	705
	Low	1015	1010	980	955	910	840	725	600
111-16	High	1880	1815	1745	1690	1575	1500	1400	1265
	Med-High	1660	1615	1570	1505	1435	1355	1260	1170
	Med-Low	1455	1410	1375	1350	1290	1235	1145	985
	Low	1265	1265	1240	1210	1180	1110	995	855
111-20	High	—	2465	2385	2305	2225	2125	2020	1910
	Med-High	2125	2120	2075	2040	1985	1900	1825	1715
	Med-Low	1745	1750	1740	1720	1685	1635	1565	1500
	Low	1545	1545	1545	1520	1495	1450	1390	1330
Both Sides or 1 Side & Bottom	High	2475	2465	2425	2365	2305	2230	2145	2015
	NO Filter	—	2510	2465	2415	2355	2280	2190	2070
135-16	High	1900	1845	1780	1705	1620	1530	1445	1320
	Med-High	1695	1645	1580	1520	1460	1385	1280	1155
	Med-Low	1460	1415	1375	1340	1290	1205	1110	—
	Low	1275	1260	1245	1230	1180	1135	—	—
135-20	High	—	2260	2185	2085	2025	1935	1835	1730
	Med-High	2110	2070	2015	1960	1885	1810	1715	1620
	Med-Low	1790	1775	1755	1720	1670	1610	1535	1455
	Low	1495	1500	1515	1485	1450	1400	1345	1270
155-20	High	—	2300	2235	2155	2055	1980	1870	1775
	Med-High	—	2050	2005	1945	1880	1805	1720	1640
	Med-Low	1790	1770	1740	1710	1635	1580	1520	1440
	Low	1520	1525	1505	1485	1450	1410	1350	1290

* Air delivery above 1800 CFM requires that both sides, or a combination of 1 side and bottom, or bottom only of the furnace be used for return air. A filter is required for each return-air supply.

—Indicates unstable operating conditions.

Dimensions



- NOTES:**
- Two additional 7/8-in. dia holes are located in the top plate.
 - Minimum return-air opening at furnace:
 - For 800 CFM—16-in. round or 14 1/2 x 12-in. rectangle.
 - For 1200 CFM—20-in. round or 14 1/2 x 19 1/2-in. rectangle.
 - For 1600 CFM—22-in. round or 14 1/2 x 23 1/4-in. rectangle.
 - For airflow requirements above 1800 CFM, use both side inlets, a combination of 1 side inlet and the bottom, or the bottom only.

A98025

DIMENSIONS (In.)

UNIT SIZE	A	D	E	VENT CONN* (Dia)
045-08	14-3/16	12-9/16	11-11/16	4
045-12	14-3/16	12-9/16	11-11/16	4
070-08	14-3/16	12-9/16	11-11/16	4
070-12	14-3/16	12-9/16	11-11/16	4
090-14	17-1/2	15-7/8	16	4
090-16	21	19-3/8	18-1/2	4
111-12	17-1/2	15-7/8	16	4
111-16	21	19-3/8	18-1/2	4
111-20	24-1/2	22-7/8	22	4
135-16	21	19-3/8	18-1/2	5†
135-20	24-1/2	22-7/8	22	5†
155-20	24-1/2	22-7/8	22	5†

* Refer to the furnace Installation Instructions for proper venting procedures.

† Oval collar

MINIMUM INCHES CLEARANCE TO COMBUSTIBLE CONSTRUCTION

This forced air furnace is equipped for use with natural gas at altitudes 0 - 10,000 ft (0-3,050m).

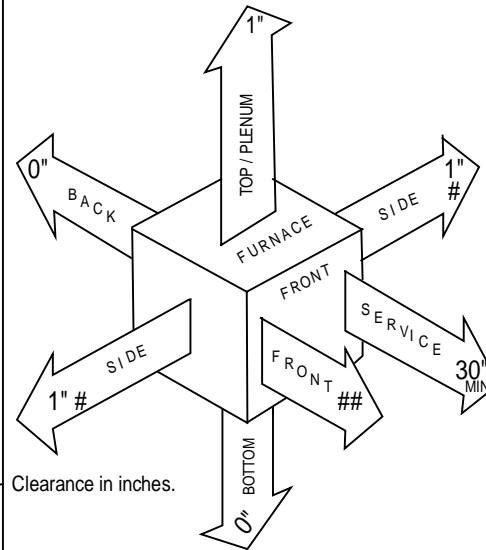
An accessory kit, supplied by the manufacturer, shall be used to convert to propane gas use or may be required for some natural gas applications.

This furnace is for indoor installation in a building constructed on site.

This furnace may be installed on combustible flooring in alcove or closet at minimum clearance from combustible material.

This furnace may be used with a Type B-1 Vent and may be vented in common with other gas-fired appliances.

This furnace is approved for UPFLOW installations only.



Clearance in inches.

Vent Clearance to combustibles:

For Single Wall vents 6 inches (6 po).

For Type B-1 vent type 1 inch (1 po).

320325-101 REV. G (LIT)

For furnaces wider than 14.25 inches (362mm) may be 0 inches.

For single wall vent type 6 inches. For Type B-1 vent type 3 inches.

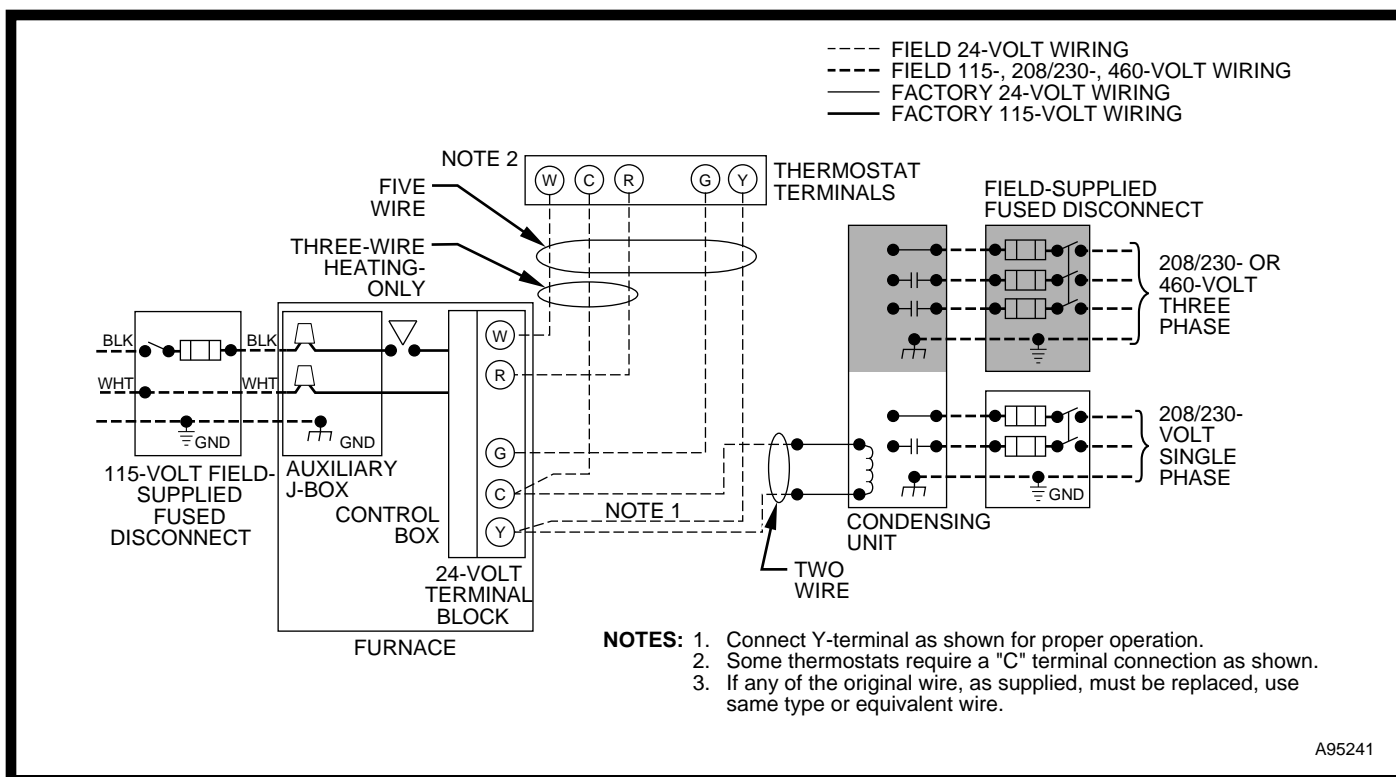
A97621



MEETS DOE RESIDENTIAL CONSERVATION SERVICES PROGRAM STANDARDS.

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

Typical wiring schematic



Electrical data

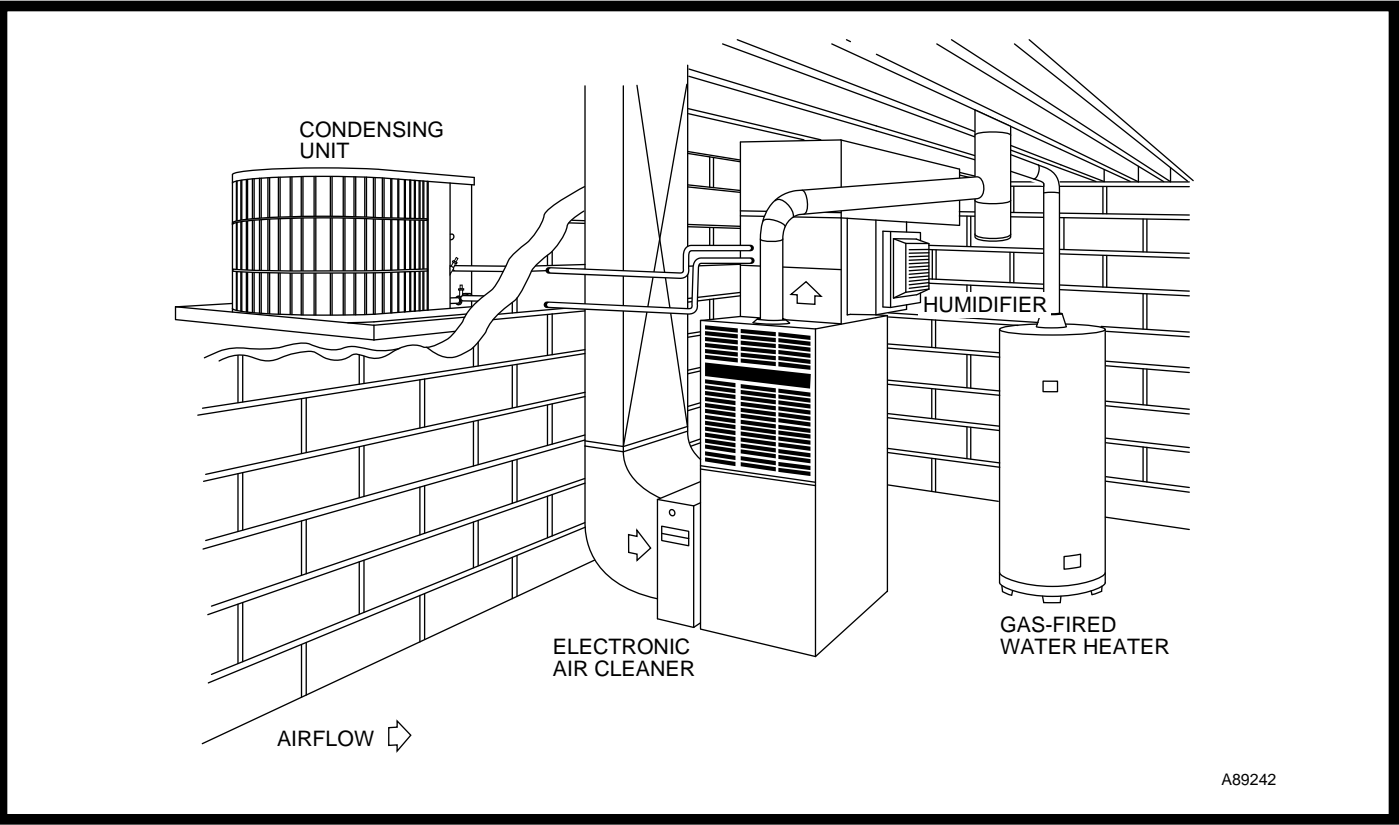
UNIT SIZE	045-08	045-12	070-08	070-12	090-14	090-16	111-12	111-16	111-20	135-16	135-20	155-20
UNIT VOLTS — HERTZ — PHASE	115 — 60 — 1											
MINIMUM WIRE SIZE	14	14	14	14	14	14	14	14	12	14	12	12
MAXIMUM WIRE LENGTH (Ft)*	47	34	47	32	31	27	35	28	31	28	33	31
MAXIMUM UNIT AMPS	6.0	8.3	5.9	8.7	9.0	10.4	8.0	10.1	14.4	10.1	13.3	14.0
OPERATING VOLTAGE RANGE (Min—Max)†	104 — 127											
MAX FUSE SIZE OR HACR-TYPE CKT BKR (Amps)‡	15	15	15	15	15	15	15	15	20	15	20	20
TRANSFORMER (24v)	40va											
EXTERNAL CONTROL POWER AVAILABLE	Heating											
	Cooling											
AIR CONDITIONING BLOWER RELAY	Standard											

* Length shown is as measured 1 way along wire path between unit and service panel for maximum 2 percent voltage drop.

† Permissible limits of the voltage range at which the unit will operate satisfactorily.

‡ Time-delay fuse is recommended.

Typical installation



SERVICE TRAINING

Packaged Service Training programs are an excellent way to increase your knowledge of the equipment discussed in this manual, including:

- Unit Familiarization
- Maintenance
- Installation Overview
- Operating Sequence

A large selection of product, theory, and skills programs is available, using popular video-based formats and materials. All include video and/or slides, plus companion book.

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A94328

